

ALBERTA INNOVATES CLEAN RESOURCES

ENVIRONMENTAL INNOVATION

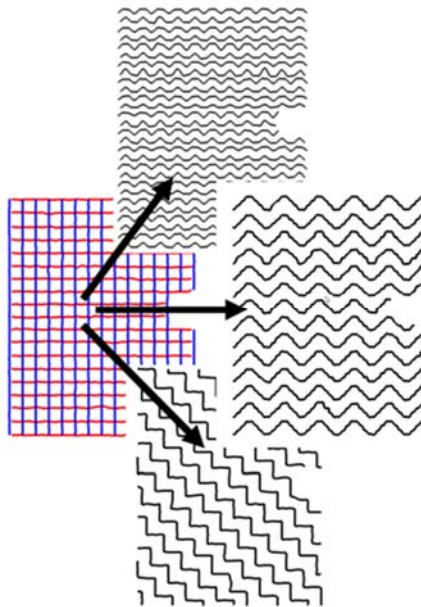
LAND AND BIODIVERSITY

FUNDING DETAILS

EcoSeis Phase 1

OptiSeis is developing a new approach for acquiring seismic data that reduces the environmental impact of collecting subsurface information. EcoSeis will enable companies to acquire the same high quality subsurface seismic images as conventional techniques while reducing the area of trees cleared on seismic programs by over 50%. This is accomplished with unique line geometries that can be configured to allow avoidance of environmentally sensitive or hazardous areas while still providing high quality data and safe access for field personnel. The method will work with multiple energy source or equipment types and can be applied in many different types of terrains both within Canada and internationally.

ecoSeis



RECIPIENT:

OptiSeis Solutions
Ltd.



PARTNERS:

Imperial, CNRL,
ConocoPhillips, Suncor,
Cenovus, NRC-IRAP



TOTAL BUDGET:

\$2,754,000



AI FUNDING:

\$195,000



PROJECT DATES:

DEC 2020 –
JAN 2022



PROJECT TRL:

Start: 4
End: 6

APPLICATION

The project's technology enables producers to map belowground hydrocarbon resources while reducing their energy development footprint. The EcoSeis project is developing leading edge geophysical exploration technologies that supports biodiversity conservation, GHG reduction and contributes to growing Alberta's digital economy.

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PROJECT GOALS

The key goals of the project were to:

- Advance an algorithm-based approach (EcoSeis) to designing seismic acquisition programs that combines low energy sources and unique seismic line geometries to reduce footprint.
- Test algorithms using both synthetic and real data from an historic 3D seismic program.
- Evaluate algorithm effectiveness in providing high quality data while avoiding sensitive habitat and reducing the amount of line clearing.
- Demonstrate additional benefits, including reduction of GHG emissions.

BENEFITS TO ALBERTA

The successful implementation of this technology or use of the knowledge generated could result in:

- Reduced costs for seismic data acquisition, which will improve competitiveness of Alberta's energy sector and make the province a more attractive place to invest.
- Reduced industrial footprint and fragmentation of forest and wetland habitats, which will promote biodiversity conservation and protection of species of concern.
- New market opportunities (domestic and international) for OptiSeis in non-energy sectors that also require seismic data acquisition such as carbon capture and storage (CCS) and mining of critical minerals.
- Enhancement of Alberta's reputation for developing leading-edge geophysical exploration technologies and digital solutions.



**1 New
Product/Service**



1 Project Job



**2 Jobs Created, 5
Jobs Retained
and 22 HQP
Trained**



**Seismic Linear
Footprint Reduced
by up to 50%**

CURRENT STATUS

JAN 2022

The project was successfully completed in January 2022. Key highlights include:

- Analysis of EcoSeis geometries demonstrated potential reduction in total linear km of seismic cut-lines by up to 51%, total hectares cut by up to 62% and GHG emissions by up to 55%.
- Validation of low-energy sources for producing high quality data for near surface imaging.
- 22 HQP trained.

Next Steps: 2022-2024 EcoSeis Phase 2 Field Trial approved and underway.